

Subject: [Betty Paul <PAUL@DARPA.MIL>: Final Draft Minutes CCIRN]

From: "Betty Paul" <PAUL@DARPA.MIL>

Date: 3-12-1990 18:14

To: neggers@SURFnet.nl

CC:

Received: from HEARNVAX.nic.SURFnet.nl by SURFnet.NL; Mon, 3 Dec 90 18:13 MET

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Received: by vax.darpa.mil (5.61/5.61+local) id <AA06935>; Mon, 3 Dec 90 12:13:21 -0500

Date: Mon 3 Dec 90 12:13:19-EST

From: Betty Paul <PAUL@DARPA.MIL>

Subject: [Betty Paul <PAUL@DARPA.MIL>: Final Draft Minutes CCIRN]

To: neggers@SURFnet.nl

Message-id: <660244399.0.PAUL@VAX.DARPA.MIL>

Posted-Date: Mon 3 Dec 90 12:13:19-EST

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Posted-Date: Mon 3 Dec 90 12:05:45-EST

Received-Date: Mon, 3 Dec 90 12:05:47 -0500

Received: by vax.darpa.mil (5.61/5.61+local)

id <AA06896>; Mon, 3 Dec 90 12:05:47 -0500

Date: Mon 3 Dec 90 12:05:45-EST

From: Betty Paul <PAUL@DARPA.MIL>

Subject: Final Draft Minutes CCIRN

To: naccirn@LBL.GOV, neggers@sarfnet.nl

Cc: paul@VAX.DARPA.MIL

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The following is the final draft of minutes for the CCIRN meeting. Please send your comments to me this week so Bill Bostwick and I can get the final out as soon as possible. Thank you.

Lynn Behnke

Kees,

Please distribute to appropriate distribution in Europe. Also, please advise us when you have the new EURO-CCIRN mailer established.

Thanks, Lynn

Draft Minutes
CCIRN Meeting
Santa Fe, New Mexico
25-26 October 1990

Attendance

Guy Almes	FARnet	almes@rice.edu
Rob Blokzijl	Europe	k13@nikhef.nl
Bill Bostwick	FNC	bostwick@darpa.mil
Brian Carpenter	Europe	brian@priam.cern.ch
John Demco	CDNnet/Canada	demco@cs.ubc.ca
Steve Goldstein	NSF	goldstein@nsf.gov

Geoff Huston	AARnet/PACCOM	g.huston@aarnet.edu.au
Peter Kirstein	Europe	kirstein@cs.ucl.ac.uk
Barry Leiner	IAB	bleiner@ads.com
Fernando Liello	Europe	liello@elettra-ts.infn.it
Kees Neggers	Europe	neggers@surfnet.nl
Torben Nielsen	PACCOM	torben@hawaii.edu
Jaime Perez Vidal	Europe	jper@dgl3.cec.be
Ira Richer	DARPA	richer@darpa.mil
Sven Tafvelin	Europe	tafvelin@ce.chalmers.se
Vincent Taylor	Canada/Defence	vktaylor@ncs.dnd.ca
Tony Villasenor	NASA/FNC	villasenor@nasa.gov

GENERAL

1. Welcome

Bill Bostwick called the meeting to order at 9:00 a.m. on Thursday, October 25th. We reviewed and adopted an agenda.

2. Approval of Minutes

The minutes of the May 1990 Meeting of the CCIRN held at Sophia-Antipolis had been distributed electronically. The following corrections were noted:

- <> The EASI-Gate T1 circuit from Cornell to CERN is managed by MERIT (not by GMD as stated in the minutes).
- <> The CCIRN Terms of Reference, included in the May 1990 minutes, omit NORDUnet as an initial member. This was taken to be a possible error in the Terms of Reference rather than in the minutes.

3. Reports

3.a: NACCIRN

The High Performance Computing Initiative is still active, including the provision for an NREN. Funding may occur via the Office of Management and Budget process, and legislation is expected to be introduced in the next session of Congress.

Steve Goldstein reported on the upgrade of the NSFNET backbone to T3. This T3 Backbone is being implemented as a technically separate network. It is being implemented with routers in MCI junction centers and can avail itself of the MCI's total plant for connectivity, rather than depending on dedicated point-to-point links. Therefore NSF will in the future show the T3 Backbone as a "cloud", rather than as point-to-point links on a map. Once all the 16 Backbone nodes will have been connected to the T3 Backbone, the current T1 Backbone will be discontinued.

Steve Goldstein passed out a paper, co-authored with Christian Michau, CNRS, France, "Convergence of European and North American Research and Academic Networking", presented (in their absence) by Christian Huitema at the October 3rd IFIP meeting in Zurich, Switzerland. The paper was intended to make the case for viewing networking activities on the two continents as converging in time, rejecting the argument of North American TCP/IP and European OSI on divergent paths. In response to objections to lack of credit for EC funding of European initiatives mentioned in the paper, and also missing mention of several European pilots, Steve offered to prepare an update with a CCIRN co-author for presentation at the Blois Conference in 1991. Peter Kirstein accepted the offer to co-author the update with Steve.

Guy Almes passed out the current near-final draft of the Terms of Reference of the NACCIRN.

Vincent Taylor noted that CA*net was being formally opened today.

There is some early planning of a possible OSI network in Canada. Its relationship to CA*net is not yet clear.

3.b: EURO-CCIRN

Kees Neggers reported on a deep revision of the EURO-CCIRN structure. The EURO-CCIRN is now composed of five individual experts, a chair, the RARE Secretary General, and a representative of COSINE/CEC. This contrasts with the previous membership, in which individuals represented specific organizations.

Similarly, the EEPG is a team of ten individual experts charged with planning a European backbone network.

RIPE is now a formal organization within RARE and has achieved very wide acceptance. Rob Blokzijl chairs RIPE.

COSINE is also progressing, and is initiating several new pilot projects. One pilot will be a mail gateway for X.400, which should improve email connectivity worldwide. It will be managed, will be placed near a good trans-Atlantic link, and at a minimum will gateway between X.400 and TCP/IP mail.

The specifications of COSINE are being reviewed. Currently only X.25/TP0 is addressed, and consideration is being given to including CLNS/TP4. Jaime Perez Vidal commented further, and mentioned that the December COSINE meeting will discuss it. COSINE is currently limited by funding and by its Terms of Reference to CONS OSI.

A contractor has been selected for Y-net.

A research networking meeting will be held this November to address research networking with no limitation to a particular protocol stack. Peter Tindemans, chair of the COSINE policy group, is planning this meeting.

Brian Carpenter asked how agencies such as COSINE (and others) can be convinced to join in cooperative links rather than run narrowly defined lower-speed lines.

<<At 10:00 a.m., the meeting rose to toast the official opening of CA*net. Glasses of champagne were served the members, who joined the chair in his toast to the success of CA*net and to the health of our colleagues who have contributed to it.>>

Thanks to Peter Kirstein for his work on maintaining a list of trans-Atlantic links. This work is now being passed on to the IEPG link topology database project.

3.c: PAC-CCIRN

Torben Nielsen reported on the Pacific situation. All the networks in Japan have formed the Japan Council on Research Networking very recently. Bill Bostwick will contact this Council and invite them to participate in CCIRN activities.

3.d: Non-national Bodies

Barry Leiner noted the intended non-national nature of the IAB. The IAB intends to include people from Europe and the Pacific in its membership. He further noted that the InterOp conference this month included a considerable number of OSI demonstrations, as well as of IP demonstrations. Brian Carpenter noted that there was a specific demonstration of CLNS connectivity between the InterOp floor and Europe.

Peter Kirstein reported on the ICB. Specifically he noted that it might be useful to have the IEPG and the facilities group of the ICB meet jointly. He also noted that at InterOp there was a demonstration of the DARPA multi-media conferencing facility, including InterOp, Boston, and London.

4. Action on IEPG Workplan Items

First we listed the specific items brought to us by the IEPG.

* Link Coordination and Planning

Concern was expressed that the database include both intra-continental and inter-continental links, even though intra-continental links are not, strictly speaking, under IEPG responsibility.

It was further discussed that different links have different policy constraints placed on them. The IEPG will need to take these constraints into account in their planning recommendations.

* Mapping

* Statistics and Monitoring

* Global Domain Name System

* Global Registration

* Global Routing

* NOC Coordination

* Introduction of CLNS

* Email Reliability and Coordination

Barry Leiner voice several concerns:

<> Will the IEPG do all the work or identify, delegate, and monitor? Rob Blokzijl clarified that the IEPG does in fact intend to stress identifying issues, then delegating the work and monitoring progress.

<> Will the scope emphasize low protocol layers, as in most of the specific items listed, or will it include such vital services as email reliability? It was noted that, in line with the initial setup of the IEPG, the current focus is on the lower layer issues. Other services should not in principle be excluded, though care should be given to balance all tasks with the available expertise and capacity.

This led to a discussion, led by Barry Leiner, that we build a list of issues that are important to the CCIRN. He proposed brainstorming, then prioritization. The full brainstormed list was quite large. This list was then divided into 'N' for now and 'F' for future.

All eight items brought forward by the IEPG were specifically agreed on as being in the 'N' category. Among 'N' items, the numeral '1' denotes a high priority item. Among 'N 1' items, 'i' denotes an item the IEPG has named as one of its tasks (the eight items the IEPG identified and the Email item agreed on in the joint IEPG/CCIRN meeting Wednesday morning), 'a' denotes issues the IEPG has implicitly agreed to consider as aspects of their named items, and 'x' denotes items the IEPG has not agreed to take on.

N 1 i Link coordination and planning

N 1 i Mapping

N 1 i Statistics and measurement

N 1 i Global DNS

N 1 i Global Registration

N 1 i Global Routing

N 1 i NOC Coordination

N 1 i Introduction of CLNS

N 1 i Email coordination

N 1 a Network management

N 1 a Multi-protocol support

N 1 x Directory Services, e.g., X.500

N 1 x File services

N 1 x National character sets

N 1 x Changing Global Reality

N 1 x Access control and network integrity

N Interactive login

N Video conferencing

N Trans-oceanic and continental distributed facilities

N Reliable end-to-end services

N Remote job entry

N Dial-in access

F Computer-supported collaborative work

- F Access to unique resources
- F Distributed visualization
- F Compound documents
- F Client server facilities
- F Archives for distributed computing
- F Data representation and exchange
- F Group communications services

This leaves five issues (labelled `N 1 x') to be assigned:

- * Directory Services, e.g., X.500: ask the IETF, COSINE, and SInet to tell us how we should monitor this. Peter Kirstein will communicate this to the groups.
- * File services: ask the IEPG to include this within their scope, just as they they have for email. Fernando Liello will communicate this to the IEPG.
- * National character sets: we want RARE to deal with this. Kees Neggers will coordinate with RARE, with help from Brian Carpenter and Torben Nielsen.
- * Changing Global Reality: the CCIRN will add this item to its own agenda.
- * Access control and network integrity: the CCIRN will add this item to its own agenda.

As far as tasking the IEPG is concerned, we conclude that the eight items named by the IEPG are in fact of high priority and are items where we need IEPG technical leadership and input. Further, we have added two items, viz. email and file services to this list of eight. We want the IEPG to push ahead on these ten topics.

The topics of Directory Services and National Character Sets will be charged to other technical bodies, with CCIRN monitoring their progress.

This leaves Changing Global Realities and Access Control as topics for the CCIRN to deal with further at this meeting. (NB: Only the former topic was addressed at this meeting.)

5. Changing Global Realities

As a general rule, we desire very broad access by many countries to the Internet. It is recognized, however, that the issues are complex and include the following:

- Copyright laws, including the fact that some countries connected to the Internet do not respect copyright laws.
- Some resources connected to the Internet, such as the Cray at CERN, are restricted by the US Dept of Commerce.
- Some countries may proscribe cooperation with other countries, to extend to networking. For example, U.S. sanctions prohibit any agency of the U.S. Government from cooperating with any agency of the government of the Republic of South Africa. Therefore, NSF has had to decline requests for network connections from the Republic of South Africa.
- Some portions of the Internet may allow commercial use and others may not.
- The role of the US Dept of Commerce in restricting the export of U.S. technology is sometimes manifested in ways that make international cooperation more difficult.
- Most restrictions deal with what one can do with the Internet rather than with what organizations may connect.
- Privacy-enhanced mail is desired by many people, but may be forbidden by the US Dept of Commerce.
- Some countries may not allow the transmission of encrypted data across their borders.
- Some countries may have privacy laws so stringent that full implementation of X.500 white pages services may not be possible.
- Since many legitimate restrictions are on specific network resources, it is important for us to be able to authenticate such remote access.
- Restrictions on the `export' of encryption technology sometimes have the ironic effect of making it more difficult to authenticate remote access.
- The anonymous FTP facility is a potential problem due to its lack of authentication. Some steps are being taken to restrict access to anonymous FTP, e.g., by using traceroute techniques to see whether the user attempting

anonymous FTP is coming over certain proscribed networks.

6. Specific Recommendations from the IEPG on Links

6.a: Regarding the Proposed German Fat Pipe

The IEPG is concerned that the apparent lack of coordination of IP and DECnet routing at the German end of the fat pipe could cause routing problems throughout Europe.

The CCIRN asks the EURO-CCIRN to request that the future operators of this link ensure routing coordination, with RIPE in the case of IP and with HSDCG in the case of DECnet.

6.b: Regarding the Proposed CREN Link from the US to Japan

The IEPG recommends that any CREN link from the US to Japan be coordinated with the IEPG.

The CCIRN will ask CREN to coordinate as requested. It is important that this coordination happen soon, and it is important that the IEPG respond quickly.

6.c: Discussion of a related issue: Torben Nielsen mentioned that there was a desire for better Europe-to-Japan capacity. One alternative would be a satellite link, but this would have moderately high delay and high cost. Another would be a terrestrial 64kb/s link from Europe to Japan; this would have a very high cost (about \$15k/month). For less money, the capacity of both trans-oceanic links could be increased. This raises several issues and a great opportunity if the issues are resolved in a favorable way. The issues include:

- Is the transit policy for NSFnet and other U.S. agency backbones allowing such transit traffic stable enough to justify a long-term plan to support Europe-to-Japan traffic via the US? Steve Goldstein reiterated Steve Wolff's statements that NSFnet permits transit of traffic which meets the NSFnet [Interim] Acceptable Use Criteria, so long as it did not burden the NSFnet. Given that Torben was talking in terms of multiple 64kb/s, and that NSFnet is moving to T3, this ought not present capacity problems, except, as Torben noted, on opposite-ocean trans-oceanic links (i.e., 64 kb/s ***transit*** traffic from the Pacific bound for Europe would require an additional 64 kb/s of capacity--ignoring the benefits of stat-muxing for the time being--between the U.S. and Europe to carry the additional load.

Torben suggested that the FNC/WGC adopt a policy permitting transit traffic, similar to NSF's, that this policy remain stable for a period comparable to the multi-year commitments to carriers required for discounts (typically 3-5 years).

- Would the performance be good?
- Can the necessary engineering coordination be done?
- Can a means be found to combine various sources of funding to increase the capacity of the trans-oceanic links?
- Might there be non-technical non-financial considerations for Europe or for Japan that would make going through the US undesirable?

Bill Bostwick will take this issue to the FNC.

There was widespread agreement that the IEPG was functioning in a highly productive fashion, and that the formation of the IEPG was the most significant accomplishment of the CCIRN since its start three years ago.

7. IP Management: Role of IETF, RIPE, etc.

Coordination of IP Management among the DDN/SRI NIC and RIPE has happened and is developing. RIPE and RARE are working to establish an effective NIC within Europe. Even now, RIPE has established a whois database in Amsterdam. It can be accessed via the command:

```
whois -h mcsun.eu.net
```

Barry Leiner noted the overlap between current whois databases and the future X.500 databases. Rob Blokzijl noted that this whois database is also accessible via X.500! (Those interested in advancing X.500 found this fact quite exciting.)

The RIPE Terms of Reference have been published as an RFC.

The CCIRN expressed great pleasure with the tremendous success that RIPE has had. Given that RIPE came into existence only a year ago, they have made very significant contributions to European and global IP use. The extent to which this success is due to the personal leadership of Rob Blokzijl was widely appreciated.

8. Report on CO/CL Workshop

In lieu of discussing this topic, copies of the written report of this workshop were distributed.

9. IEPG Terms of Reference

In reviewing the draft Terms of Reference, it was regarded as important that some selected services not be excluded by the given language. This would be in keeping, for example, with the inclusion of email and file services in the workplan that we agreed to at this meeting.

We agreed to change the last sentence of the first paragraph to be:

"The goal of the IEPG is to work toward a more technically coordinated environment of global networking infrastructural services in keeping with the spirit of the CCIRN."

The nature of the two-way flow of information between the CCIRN and the IEPG was discussed and agreed. To clarify this, the first two sentences of section 2 were changed to:

"The IEPG will support the CCIRN in working towards coordination of the operations and planning of the environment of global networking infrastructural services. The IEPG will work with the CCIRN to identify and prioritize specific technical topics on which to focus attention."

The following sentence is inserted at the beginning of the the last paragraph:

"The IEPG, in conjunction with the CCIRN, will develop and maintain a workplan."

Section 3 is changed to:

"The IEPG membership is made up of network engineers selected by the CCIRN member bodies. IEPG membership is intended to be based on a stable membership of technical experts. The IEPG chair may invite non-member experts on a particular issue on a temporary basis."

10. DECnet Issues

The CCIRN recognizes that the global DECnet community has organized itself through the HEPnet-SPAN DECnet Coordinating Group. It agrees further that someone acceptable to the HSDCG will be a member of the IEPG.

11. Planning New Workshops

We will refrain from planning new workshops until we receive the reports from the IEPG on the (now) ten technical issues.

12. Scheduling

We propose a one-day teleconference in Washington and London on January 17, 1991. Ira Richer and Peter Kirstein will do the detailed planning for this.

We propose the spring 1991 meeting to be near Paris on May 21-22, 1991.

We propose the fall 1991 meeting to be either in the USA or in Australia on November 11-13, 1991.

At the regular two-day meetings, members are urged to plan on attending for

two full days.

13. Discussion of the Changing Global Reality

Barry led a discussion of the how the changing global realities impact on policy issues. We agreed to discuss his ideas between now and the next meeting.

14. Observation on Eastern Europe

The CCIRN notes the inherent openness of the intercontinental research network infrastructural environment and that this environment will expand to include eastern Europe and non-COCOM countries.

15. Adjournment

The meeting adjourned at about 1:00 p.m. on Friday, October 26th.

